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MICRO-ORGANISMS AND DIGESTION.—The extensive researches which are now being carried on in regard to the relations of bacteria to disease increase our interest in any addition to our knowledge of their connection with the normal activities of the body. Drs. Harris and Tooth, of St. Bartholemew's Hospital, have undertaken a series of experiments to investigate the relations of micro-organisms to digestion, and have published a preliminary communication on the subject.[1] They find it easy to prove that proteids can be digested by pepsin independently of micro-organisms, but have not succeeded in establishing the converse proposition, namely, that micro-organisms can of themselves convert proteids into peptone. In experimenting with trypsin it was found necessary to employ antiseptics in order to make sterile experiments. With mercuric chloride, 1 to 2 per cent. neither peptone nor bacteria appeared, with carbolic acid, 1 to 2 per cent. peptone was abundant but bacteria absent; while iodine interfered neither with the digestion nor the development of bacteria. It was thus proved that the pancreatic ferment, like the gastric, can digest proteids without the aid of micro-organisms.

It was found that the formation of leucin and tyrosin is probably due at least in part to the action of bacteria, and that the formation of indol seems to be entirely dependent upon it. The results of experiments indicate that there are special indol-forming organisms, in the absence of which this substance does not appear.

These conclusions are in substantial accord with views which have been previously entertained, though hitherto they have been accepted without adequate experimental proof.—*M. A. Johnson.*

PSYCHOLOGY.

OBSERVATIONS ON PUTORIUS VISON.—On July 6, 1887, while engaged in geological work on the Cedar River, near Osage, Iowa, my attention was attracted by the peculiar actions of a Mink (*Putorius vison.*) By careful maneuvering, we were enabled to approach to within a short distance of where it was engaged, and there watch its behaviour unobserved. It was an old mother Mink engaged in fishing, for her young.

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[1] Journal of Physiology, vol. 9, No. 4.

On the ripples in the center of the stream, where the water was not more than two feet in depth, was a flat Drift Bowlder rising a few inches above the surface. On this rock the mother Mink would take her position, and here watch for small fish to approach, when she would dive into the water, be gone for a moment, and then reappear on the opposite side of the rock, usually with a fish in her mouth, which she would deposit in the center of the stone, and its struggles instantly stop by a quick sharp bite back of the head, which caused immediate death. This process was repeated without intermission, except to stop for an instant to shake the water from her furry coat, until seven fish varying from four to seven inches in length, were deposited on the rock. Then, without stopping to rest, taking one of the fish in her mouth, she plunged into the stream and swam to the shore, climbed the steep bank and ran hastily to her young, in a burrow under an old stump on the bank of the stream, fifty yards away. In a moment she was seen returning, plunged into the stream and swam to the rock, took a second fish in her mouth, entered the river once more, and returned to her young as at first.

This was repeated until all the fish had been carried away. A few moments after having removed the last fish, she returned and began her work once more. This time, however, her labors were without result, so, shifting her position to another rock in the stream, a short distance away, she continued her fishing. But although more than a quarter of an hour was spent in energetic effort, her labors were without avail, and she was this time compelled to return to her young "empty handed."

After waiting for some time, we crossed the stream to examine the burrow, but before going half way, the old Mink was met returning to her fishing ground. From the bank of the stream, where egress from the water was made, to the burrow, fifty yards distant, a well beaten path had been formed by the mother Mink in her daily excursions in quest of food for her young. Not wishing to destroy the burrow (which would have been necessary) the number and condition of the young was not ascertained. How long this Mink had been engaged in fishing before our attention was attracted to her, or how long it would have been continued, had she been undisturbed, it is difficult to say. But it is true that a degree of parental love and affection, (if we may so term it,) was evinced by the mother Mink for her young, in thus so indefatigably laboring, under a scorching July sun, to procure them food, as it is but rarely witnessed.—*C. L. Webster.*

A PECULIAR HABIT OF THE BLACK BASS.—I once observed a singular race between a Black Bass (*Micropterus dolomieu,*) and a soft shelled Turtle (*Aspidonectes spinifer*) and her young. The first noticed was the old Turtle and her young swimming steadily up stream, turning neither to the right hand or to the left, (an unusual occurrence, so far as my observations extend,) and closely followed by a large Black Bass. Both the mother Turtle and her young appeared very much exhausted, and would very often come to the surface for air. The young Turtle, if not disturbed would swim close behind its mother, but the Bass, who was always hovering *over* or following a foot or so in the rear, would often make a lunge for the young one, and apparently bite it, which would cause it to instantly dart *under* its parent, and swim in this position until compelled to come to the surface to breathe. The young one finally became so exhausted and worried by the Bass, that at three different times it was observed to lay hold of the edge of its parent's shell with its mouth, and thus compel her to take it in tow. Not the slightest attention was paid to the young one by its parent.

Several times two or three Red Horse ?(*Moxostoma macrolepidotum,*) attempted to join in the chase, but was each time immediately driven away by the Bass. This performance was watched some time by me, and when the trio was last seen, the "play" was still going on.

We have at other times and in other places, observed this Turtle to be followed by Black Bass. This has also been observed by Dr. Kirtland, (Geological Survey of Ohio, Vol. IV, Zoology and Botany, P. P. 668—669.) Whether the Black Bass is a natural enemy of this species of Turtle, or what its real intention may be in so often following it, we are at present unable to say.—*C. L. Webster.*

ARCHÆOLOGY AND ANTHROPOLOGY.[1]

ANTHROPOMETRY.—Anthropology in its literal sense is Man Science. It deals with the structure, history and development of men. The complexity of man in nature gives birth to many sciences. Some of these are old and some are new.

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[1] This Department is edited by Thomas Wilson Esq., Smithsonian Institution, Washington, D.C.